

5th INTERNATIONAL MULTIDISCIPLINARY
SCIENTIFIC CONFERENCE ON SOCIAL SCIENCES AND ARTS
S G E M 2 0 1 8

CONFERENCE PROCEEDINGS
VOLUME 5



URBAN PLANNING, ARCHITECTURE & DESIGN
ISSUE 5.3

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ARCHITECTURE AND DESIGN
.....

26 August – 01 September, 2018
Albena Co., Bulgaria

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THE COMPLEX ANALYSIS OF ANAKOPIA FORTRESS GATES CENTRE ARCHITECTURE – THE CAPITAL OF THE EARLY MEDIEVAL ABKHAZIAN KINGDOM

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ABSTRACT

The article describes the peculiarities of architecture of the objects of the second line of defense of Anacopia (the capital of the early-medieval kingdom of Abkhazia) – a unique monument of early-medieval architecture of VI-XI c.: the tower at the gates, the adjacent gate and walls. We revealed regional historic processes, show the results of archaeological researches, digital examination, analysis of the building stratigraphy of the mortars, research applying methods of natural sciences, basing on which we made the dating and the attribution of the monument. We clarified the dating of the periods of building – from VI c. to X c. Basing on the results of digital examination we conclusively established the peculiarities of the architecture of the monument in different periods, determined the processes of cultural influence and borrowings. We conducted a detailed analysis of the analogue (in what concerns architecture, décor and building technique) in the territory of Armenia, Greece and Turkey, which lets us reveal the cultural identity of the object in processes of historic transformations. We determined regional peculiarities of the building technique of the byzantine period.

Keywords: architecture Byzantine towers, building technic, medieval fortresses, Abkhazian medieval architecture

INTRODUCTION

The fortress of Anacopia is one of the most integral objects of the Early Middle Ages both in Abkhazia and in the whole Black Sea region. This fact makes it a valuable sample monument formed under the influence of roman and byzantine cultural traditions. The scantiness of primary sources, absence of architectonic inscriptions on the objects in Anacopia fortress – the first capital of the early medieval Kingdom of Abkhazia remains a serious problem for the continuation of the research. In this context the value of archaeological and architectural data becomes the most important factor, an important part of studying the questions of the creation of the main political center of Abasgya and Abkhazian state mechanism as a whole. Basing on the analysis of borrowing and synthesis of knowledge in material culture we can study the formation of internal and external contacts, and the architectural legacy of abasgyan school revealed in cross-border regions proves the data from the sources about the growth of the territory of the Kingdom of Abkhazia and its influence on the periphery.

Discussion

Historic data about the territory of Abkhazia, where Anacopia is situated, were collected in the writings of ancient authors. In the second half of the second century they mentioned the kings of Apsilae, Abasgoi, Sanigs and Zygi. [1]. The walled city of

Anacopia is mentioned in the Chronicle of Georgian relation to the Arabian siege in 730s [2]. Earlier, in the VII c. A.D. the political center and a powerful stronghold of the Principdom of Abasgoti was situated here. Later it became the first residence of the Kingdom of Abkhazia. Late-byzantine chronograph George Kedrenos gives information about the events in Anacopia in the XI c. [3]. In Italian pictures of XIII-XV c. we can see the river Nicopsis and a riverside settlement. [4].

The first scientific study of the fortress is connected with the name of a swiss scientist Frederic DuBois de Montperreux (1798-1850) [5]. Father Leonid describes the tower [6], after visiting the New Athos Monastery in 1880. The first specialist to explore the tower in 1924 was an archaeologist A. S. Bashkirov [7], who was invited by the Abkhazian scientific society. In 1957-1958 archaeologist M. M. Trapsh marked the defense lines. The first – a citadel – was dated by him back to the VII-VIII c. and the main architectural layer of the second line – to the XI-XII c. [8]. He defined the discovered material as local one and concluded that the defense works were made by local abasgoti forces. However, the main works of the second defense line were made in roman-byzantine building technique, which implies that it was the emperor's order, but in VII-VIII c. byzantine emperors didn't build fortresses and didn't have garrisons in Abasgya.

V. G. Lekvinadze also pointed out two stages of building of the tower, the first one he dated back to the VII c., the second one – to the XI-XIII c. [9]. Speaking about modern research we should mention A. Y. Vmogradov and D. B. Beletskiy [10], who studied mainly the church architecture of the fortress. Since 2014 within the restoration program of National New Athos Historic And Cultural Conservancy Area "Anacopia" an archaeological (under the direction of O. H. Bgashba) [11] and architectural (under the direction of A. V. Argun) [12] study of the object which lets us get new research data. In 2018 methods of natural sciences were used to date the objects in the fortress basing on a study of brick mortars [13], the search for analogues of the objects helped to define a number of monuments on the Byzantine Empire with similar building and architectural features. The newly revealed data lets us classify the objects of Anacopia fortress by the time of construction and building technique, mark the origins and the period of their formation.

METHOD

The second defense line of the Anacopia fortress (according to the chronology) – is the most monumental part of the defense works. It consists of the west, east and south perimeter of walls, fortified with towers. Its length is 1000 m., it occupies the territory of 53 ha. It is clear that such a massive construction was being erected for a long period of time and in several stages.

The most massive is the south defense line, consisting of 7 protruding towers, connected with walls. It is directed along the east-west axis on the slope of a mountain from a steep in the ravine of the river Psyrdzha to a steep in the ravine of the river Mysra in the west. Here it ends in a massive tower at the gates, which flanks the way to the gates. In the south part of the wall there are three pass doors for sallies and counterattacks. In the west part of the wall there was a gateway. The gates and the defense line were made in the roman-byzantine building technique, based on the knowledge of strategy and tactics applied the mountain terrain. We can point out several spectacular features which don't correspond to the local tradition and have numerous analogues in the territory of the former Byzantine empire: several line of brick in the laying of the walls, which is rare

work made of rubble stone, usage of brick for the arches of embrasures, a system of round thru holes with the diameter of 5-6 cm., external rendering of the walls, the shape and the location of the protruding towers beaded on the wall (the fortresses in Turkey: Mamur, Iogurchu, Asar, Khadifale, Manisa; and in Greece: Didymoteicho). Extensional and planning solutions, the scales and the quality of construction imply that it was an imperial order, which turned Anacopia into the main byzantine stronghold in Abkhazia, which it wasn't able to use for some reasons. Analysis of the brick mortar points at years 570-580 which proves the hypothesis which was made earlier [13].

The tower at the gates – is the most monumental building of the second defense line and the fortress in general. We don't doubt that the tower was built in the stages separated in time. The location of the floor of the first floor can be determined thanks to the brick lodgment discovered in 2015 after the works had been finished. Also it was discovered that the walls of the first floor had a thickening of the semi-moon shape in those places where rams could be used.

According to the results of the research in the first stage of building we revealed that:

- The tower consisted of two floors and a battle platform framed with a parapet with battlements. Its height from the top of the brick lodgment was 9,1 m. The entrance to the first floor was in the north part, the embrasure was bridged over with wholesome slabs with lintel which was 1 m. high. It was used to store water, provision and, maybe, armaments. The aperture of the window was made in east side, because it was the coolest one, according to the recommendations by Vitruvius – from it one could see the road leading to the tower and do archery. The lift slabs between the walls were bar-shaped along the main beams.
- There were two walls adjacent (traced in full size) to the tower: one in the north-east, the other in the north. Between them there were entrances to both floors of the tower. The battle platform had exits to battle paths of both walls which had the same height.
- The tower had big capacity for missile armaments. In portholes and on the battle platform there were martinets. The width of the battlements (3m.) and spaces (1,2m.) show the garrison nature of the construction, when a small number of warriors can counter threats of superior forces.
- To shut the battle windows people used shields, the doorways were covered with jacking shields, which were used as a footbridge in time of peace. The hoister was situated on the battle platform. The entrance to the tower could be opened only after capturing the upper defensive position.

The second stage of building affected the tower, the entrance gate and adjacent parts of the walls. In the west pane appeared a built-in cistern. The tower got three additional floors, two upper floors were arched and the first floor was refilled and was never used again. The tower ended in a viewing platform surrounded with a high parapet. The mortars of the laying form a building stratigraphy: the mortars of the first stage had large gravel fraction, those of the second stage – powdery fraction with opus signinum. The similarity of the mortars of built-on floors, the support pillar, the outer cistern and the additional offset near the gate shows that they were built at the same time. The built-on floors were used for living. On the fourth floor appeared a privileged room with a fireplace in the south part of the wall opposite the autonomous entrance, which led from the built-on west part of the fortress. The measurements of the tower walls show that the pillar with an eight-sided column cap laying on the second storey floor supported the upper dome. Four semi-functional rib-arches were based on it.

Near the root of the tower were discovered fragments of the bricks of the shaft, collar and the foot of the lost circular column (5 pcs). Its diameter according to the measure of the collar is 1,2m. Most probably, the builders put the column on a backfilled base, and it, more than likely, was the reason of its destruction.

The construction of the floor of the third storey has numerous analogues in tower building of different eras. The main position of the fourth storey can be explained by the fact that the ends of the beams weren't stiffly fixed in the walls. The third storey was supplied using an access ladder leading from the second floor through a hole in the barrel-shaped floor. In case the lower storeys were captured, the defenders could easily destroy the lift slab between the second and the third storeys by demolishing one or several legs situated near the wall. At the same time there was no access to the fourth floor if the door oriented towards the defensive wall was locked from the inside. There was a fireplace made of limestone bricks with a semicircular connector and a flow through chimney. During the second stage of building bricks weren't used, although their usage in the furnace part, a mirror and the chimneystack of the fireplace. Opposite the fireplace in the north part of the fourth floor there was an entrance gate, connected with the west defense wall through a battle path. In the body of the fourth floor there were stone stairs which led from the staircase landing between the third and the fourth floors to the battle platform of the upper floor. The stairs were lit with a small rectangular aperture.

We shall note that after the reconstruction due to the rebuilding the defensive function of the tower became less important. In the parapet of the north part there was an embrasure with the width of 0,7 m, for an emergent evacuation of observers with the help of an accommodation ladder through the west defense wall.

A study of the mortars from built-on parts of tower and gate walls shows years 960-980. [14]. It proves a hypothesis about the building activity of Abkhazian king Georgi II and his brother Leon III (957-967). We also revealed the reconstruction of the temple of Theodor took place between 910 and 930 at the time with the addition of upper floors of the gate tower in Anacopia.

An exemplar feature of the gate tower, which makes it a unique architectural monument of early-medieval fortification architecture, is its vaults which appeared during the second stage of construction. The vaults are formed with four semicircular arches, which lean on brackets, made in the walls, with one end and on the column in the center of the tower with the other end. A self-supporting vault was made on the supporting arches according to their shape. The vaults of the gate tower don't have analogues in the territory of Abkhazia and adjoining territories. The most similar and well-preserved monument is the gate tower in Akhtala, in which each of three floors has vaults resting upon six semicircular arches following their shape. Arch ribs in Akhtala lean on massive hexagonal brackets opposed to similar brackets connected with the walls. The first column is settled on broad wholesome slab which forms a stable basis. This joint in Akhtala looks more monumental, but less aesthetic. The column in Akhtala doesn't have the foot and the column cap. Massive rectangular brackets made in its shaft perform the function of the column cap but aren't caps. This simplification doesn't affect sustaining capability of the construction, but looks like an embarrassing deviation from an architectural method, which has numerous examples in many civilian monuments in Armenia, both of earlier and later historic periods. The similarity of architectural execution of the towers in Akhtala and Anacopia (entasis of the exterior outline, radical location of rib-vaults, existence of brackets-impôts, the shape of self-

supporting vaults, holes to settle the framework under the vault) points at the same building school. At the same time one can note differences in technical performance of the objects. The walls of the Anacopian tower of the second period are made of elaborated quadrrels of limestone, which in general form a profile. The walls of the tower in Akhtala are made of broken stone of local rocks. The system of laying in the tower differs significantly from the rest of the buildings in the fortress. The bowing of the line of the circle is close to critical, that made the builders lean arches both on brackets and pilasters built in the walls of the first floor. These and other features could show that the gate joint in Akhtala was rebuilt with haste. Well-preserved parts of defense walls in Akhtala plunge right in front of the gate tower. The construction and building technique of the tower in Akhtala is different from fortification monuments in the fortress itself and Armenian art of building as a whole. These facts can be connected with the seizure of the frontier and rebuilding of the gate joint for a foreign garrison. The findings permit us to change the date of creation of the gate joint in Akhtala from the XII-XIII c. to an earlier period, propose some questions for further studies of political, religious and dynastic links between the kingdom of Abkhazia and Armenian state formations of the X c.

According to Armenian historiography in 970 king Ashot III (953-977) founds the kingdom of Tashir-Dzoraget and enthrones his middle son Gurgen (972-991 [14]). It is thought that it was he who founded the fortress of Akhtala. It eliminates the suggestion that Akhtala was used as a sample for Anacopia and makes actual the question whether the sample of the vault was brought by the builders from Anacopia.

The appearance of the storey post aligns our vaults with those in civilian byzantine buildings of the VI century (a cistern in Constantinople). In the Constantinopolitan cistern the structure of the vault, consisting of four semicircular arches resting on a column, is a frequent module for the hall room. We can see a similar construct in Armenian monuments (Lori Berd). But the method of placing a vault following the shapes of semicircular arches radically standing out a central post. By reason of Anacopian vaults being unique, we call this type of vault "abasgoi" until we find its sample. [15].

Above the gateway there was a vault in the shape of double semicircular brick arch. From the side of outer façade to press the gate and its easy running there was a semicircular reveal in the shape of an additional arch. Below the still plate and outstanding reveals were made of limestone slabs, the cuts for the vertical risers, which the wings of the gate were attached to, also preserved. It is interesting that the reveal on jamb wall appeared only during a reconstruction in the X century. On the west façade near the left cheek plate was made an additional wall. Research has shown that the wall was built nearly parallel with the opposing wall with rectangular apertures and the resulting room – a corridor – was arched with a self-supporting vault. The discovered architectural details made of limestone prove that there was a mechanism for vertical travel of a lifting guard. And a tower floor over-the-gates. The tower floor had exits to walls, its top ended in merlons, repeating the pace on the defensive wall. Builders also took into account the location of rectangular grooves made in the part of the wall adjacent to the gate in the north. These grooves as well as the wall are dated back to the first period of building and, probably, were used to pour liquids on enemies in case of their gathering near the gate.

During the second period of building the height of the west part of the wall was changed. However the setting of the built-on floors and the wall were not keyed; it

shows that reconstructions took place in different periods. The defensive capacity of the gate assembly increased thanks to a rectangular inner yard, surrounded by walls. The north wall was built later than other walls. The inner yard already existed at the time of Arabian siege in 730s. The idea of the trap was that should the defense of the gate be neutralized, the defenders would strike at the back lines of the enemy forces, circumventing them from additional wicket gates situated in three places in the south part of the defense line.

During the second period of building from the west façade of the wall between the additional floor of the tower and the junction of the wall and gate tower there was a cistern used to gather and store rain water with the square of 18 sq. m. The aperture for rain water made during the construction of the walls at the first stage was opened in March of 2018 and it turned out that through it water got into the cistern (Fig. 1).

CONCLUSION

As a conclusion concerning the architecture of the gate tower we can say, that, basing on the type of laying, the round shape of the tower, the presence of a column inside and a ribbed vault which rests upon it, the analyzed documents, it is obvious, that all the listed analogues are dated back to the same period of time – X-XI centuries and, probably, they were made by one generation of builders. To sum up we can acknowledge the novelty of fundamental scientific principles compared to previous studies of the round tower of Anacopia; it is proved that the preserved column was on the fourth floor and there was a lower column which rested on puddled ground of a molded floor of the VI century, had a foot and a cap; we revealed a new type of vault of the byzantine period, codenamed “abasgoi”, we defined its geometry and construction; we found contemporaneous analogues of the tower in Armenia, Turkey, Greece.

We link the reconstruction (the second building period) in Anacopia fortress to the time of building activity of Abkhazian kings. Crossed-dome churches were built in the territory of Abkhazia, and the Abkhazian school of church building was formed. It is known that Georgi II found several fortresses in the territory of Kakheti, which he subdued by force of arms, and an episcopal cathedra and a cathedral in Martvili – near the capital city of Kutatisi. The foundation of a new episcopal cathedra implies that there was a vast church reform, which can explain the building of new and reconstruction of old church buildings in the territory of Abkhazia involving the Byzantine Empire. Georgi II, who is known as the main builder of churches in the Kingdom of Abkhazia, continued his father and grandfather's agenda and conquered the territories beyond Likhi and consolidated Orthodoxy in contrast with Monophysites. He put his expansion right with byzantine diplomats, who did not directly participate in military action in South Caucasus. The heir to the throne Leon III continues the agenda of his predecessors. The art of building of this period demonstrates a wide range of methods which reflect different historic and cultural traditions, formed in peculiar ways in the territory of the Kingdom of Abasgoi – a small empire with the population consisting of different ethnic groups presented in equal proportions.



Akhtala gate tower



Anacopia gate tower



Anacopia tower. East facade. Restoration



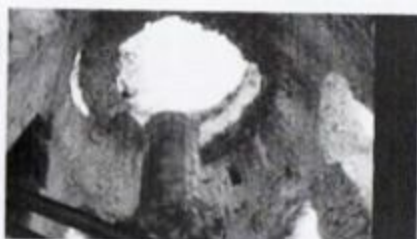
reconstruction of the tower for first construction period



the tower before archaeological works 2014



Akhtala tower. 6 arches



Anacopia tower



Lori Bend, Hall

Constructive reception of support of 4 arches on one column



Reconstruction cat, 2018



Gate Complex visual reconstruction, 2018

Fig.1

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